BK Precision
MN# 2005 & 2005A

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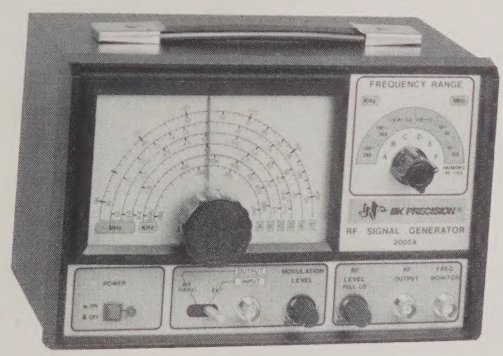
SERVICE MANUAL

FOR

BK PRECISION®

Models 2005 & 2005A

RF SIGNAL GENERATOR



BK PRECISION®

MAXTEC INTERNATIONAL CORP.

6470 W. CORTLAND ST. • CHICAGO, IL 60635

SERVICE MANUAL

for

BK PRECISION®

Model 2005A

RF Signal Generator

This service manual is intended for use by qualified electronic technicians only. To avoid electrical shock, do not perform servicing unless you are qualified to do so.

BK PRECISION®

FACTORY SERVICE OPERATIONS
6470 West Cortland Street
Chicago, Illinois 60635
(312) 889-1448

Please use this address for parts orders or technical inquiries

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REFERENCE PUBLICATIONS

	B&K-Precision Publication No.
Model 2005 Instruction Manual	480-574-9-001
Model 2005A Instruction Manual	480-673-9-001
Model 2005 Schematic Diagram & Parts List	499-376-9-001
Model 2005A Schematic Diagram & Parts List	499-413-9-001

MODEL 2005A SPECIFICATIONS

RF OUTPUT

Frequency Range:

100 kHz to 150 MHz (up to 450 MHz in harmonics) in five bands:

RANGE A: 100 kHz to 290 kHz.

RANGE B: 290 kHz to 900 kHz (0.9 MHz).

RANGE C: 0.9 MHz to 3.0 MHz.

RANGE D: 3.0 MHz to 11.0 MHz.

RANGE E: 10.0 MHz to 35.0 MHz.

RANGE F: 32.0 MHz to 150 MHz (dial is also scaled for 96 MHz to 450 MHz harmonics).

Frequency Accuracy:

±3%.

Output Level:

Continuously adjustable with RF LEVEL control. Step attenuator provides approximately 20 dB of attenuation. Maximum output level approximately 100 mV rms to 35 MHz.

FREQUENCY MONITOR OUTPUT

Fixed level, 50 mV rms 100 kHz to 150 MHz unmodulated signal.

AMPLITUDE MODULATION

Internal:

Switch selectable, 1 kHz.

External:

Switch selectable, externally generated signal from 50 Hz to 20 kHz may be used.

Carrier Wave:

Switch selectable, rf carrier wave (CW) only.

INPUT/OUTPUT Modulation Jack:

Output for 1 kHz modulation signal when internal modulation is selected. Output level is 1 V rms minimum (fixed level) into approximately 10 kΩ.

Input for external (50 Hz to 20 kHz) modulation signal when external modulation is selected. Typical input sensitivity is approximately 100 mV rms.

GENERAL SPECIFICATIONS

Power Source:

120, 220, and 240 VAC ±10%, 50/60 Hz.

Dimensions (H x W x D):

6-3/4 x 9-3/4 x 6-1/2" (17.1 x 24.8 x 16.5 cm).

Weight:

Approximately 1.1 lbs (0.5 kg).

MODEL 2005 SPECIFICATIONS

RF OUTPUT

Frequency Range:

100 kHz to 150 MHz (up to 450 MHz in harmonics) in five bands:

RANGE A: 100 kHz to 300 kHz.

RANGE B: 300 kHz to 1000 kHz (1 MHz).

RANGE C: 1.0 MHz to 3.5 MHz.

RANGE D: 3.2 MHz to 11.0 MHz.

RANGE E: 10.0 MHz to 35.0 MHz.

RANGE F: 32.0 MHz to 150 MHz (dial is also scaled for 96 MHz to 450 MHz harmonics).

Frequency Accuracy:

±3%.

Output Level:

Continuously adjustable with RF LEVEL control. Step attenuator provides approximately 20 dB of attenuation. Maximum output level approximately 100 mV rms to 35 MHz.

FREQUENCY MONITOR OUTPUT

Fixed level, 50 mV rms 100 kHz to 150 MHz unmodulated signal.

AMPLITUDE MODULATION

Internal:

Switch selectable, 1 kHz.

External:

Switch selectable, externally generated signal from 50 Hz to 20 kHz may be used.

Carrier Wave:

Switch selectable, rf carrier wave (CW) only.

INPUT/OUTPUT Modulation Jack:

Output for 1 kHz modulation signal when internal modulation is selected. Output level is 1 V rms minimum (fixed level) into approximately 10 kΩ.

Input for external (50 Hz to 20 kHz) modulation signal when external modulation is selected. Typical input sensitivity is approximately 100 mV rms.

GENERAL SPECIFICATIONS

Power Source:

120 VAC ±10%, 60 Hz.

Dimensions (H x W x D):

6-3/4 x 9-3/4 x 6-1/2" (17.1 x 24.8 x 16.5 cm).

Weight:

Approximately 1.1 lbs (0.5 kg).

CIRCUIT DESCRIPTION (See Block Diagram and Schematic)

The 2005A is a LC-Tuned RF generator that covers frequencies from 100K Hz to 150M Hz in five frequency bands. An internal 1K Hz audio oscillator or an externally provided audio signal can be used to provide AM modulation.

LC OSCILLATOR

Q201 is used as an inverting amplifier with LC tank circuits on both its input and output to form the RF Oscillator circuit. Any one of five Frequency Ranges is determined by which pair of inductors (L601-L606) get switched to the two section variable capacitor (VC601) to complete the LC tank circuits to Q201.

The frequency of oscillation can be given by the formula:

$$f = \frac{1}{2\pi\sqrt{1c}}$$

where C= VC401 is approximately 40 pf to 350 pf and L is determined by the FREQUENCY RANGE switch S601.

For example, on the lowest frequency range, L= 7.0mH ,and the low and high frequencies can be calculated:

$$f_{low} = \frac{1}{2\pi\sqrt{(7\ mH)\ (350\ pF)}} = 100\ KHz$$

and

$$f_{high} = \frac{1}{2\pi\sqrt{(7\ mH)\ (40\ pF)}} = 300\ KHz$$

1K Hz INTERNAL OSCILLATOR

When the MODULATION switch is set to INT., it connects Q302 to its RC feedback components C409-R310, C410-R311, and C411-C304 to comprise a 1K Hz phase shift oscillator. Q302 is used as an inverting amplifier and the RC components provide the necessary phase shift required to sustain oscillation.

INTERNAL MODULATION

The 1K Hz signal from the collector of Q302 is routed thru S401 and resistive divider R407,R408 to the MODULATION LEVEL control VR501. The MODULATION LEVEL control adjusts the amount of signal needed and feeds C402 which couples the signal to the gate of Q202 thru R205. The 1K Hz signal is also routed to the MODULATION INPUT/OUTPUT jack thru S401, R406, and C406 so that it can be used as test signal.

EXTERNAL MODULATION

When the MODULATION switch is set to EXT. it connects the modulation jack via a resistor and capacitor (R409,C407) to the base of Q302. Q302 functions as a buffer to the incoming signal and its collector output follows the same path to modulate the generator.

FREQUENCY MONITOR OUTPUT

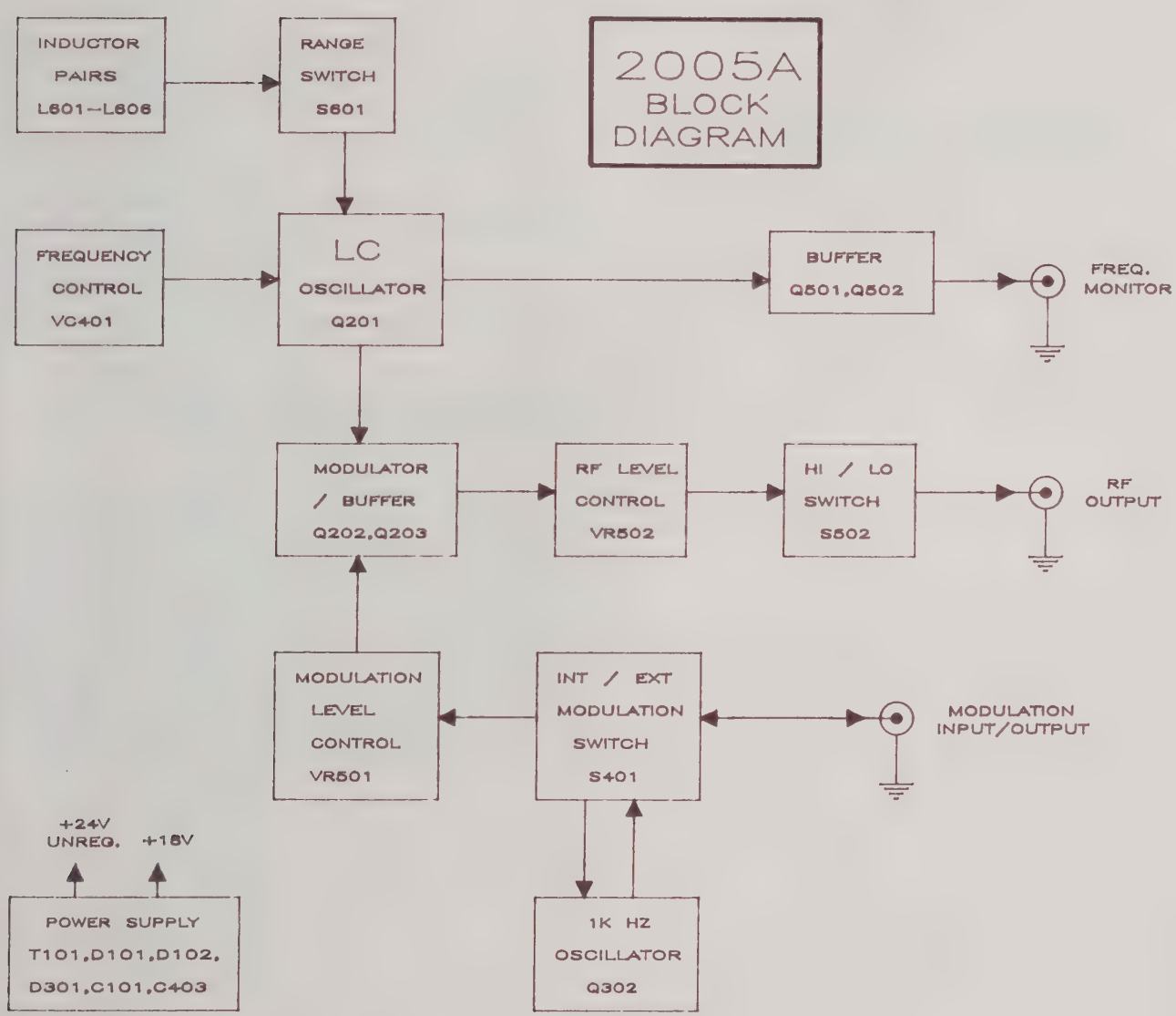
The buffer circuit consisting of Q501 and Q502 and their associated components provides a relatively constant output generator signal output while at the same time provides a high impedence to the RF oscillator circuits to prevent loading.

AM MODULATOR / BUFFER

The circuit consisting of Q202 and Q203 provides the high impedence necessary to the RF oscillator to prevent loading and the low impedence required to drive the RF LEVEL control.

POWER SUPPLY

Transformer T101 with rectifier diodes D101 and D102 and filter capacitor C101 provides approximately +24V unregulated to the generator circuits. Resistor R413, zener diode D301 and filter capacitor C405 supply the circuits with +18V regulated.


2005A
BLOCK
DIAGRAM
INDUCTOR PAIRS L601--L606
RANGE SWITCH S601
FREQUENCY CONTROL VC401
LC OSCILLATOR Q201
BUFFER Q501,Q502
FREQ. MONITOR
MODULATOR / BUFFER Q202,Q203
RF LEVEL CONTROL VR502
HI / LO SWITCH S502
RF OUTPUT
MODULATION LEVEL CONTROL VR501
INT / EXT MODULATION SWITCH S401
MODULATION INPUT/OUTPUT
+24V UNREG.
+18V
POWER SUPPLY T101,D101,D102, D301,C101,C403
1K HZ OSCILLATOR Q302

WARNING

The following instructions are for use by qualified service personnel only. To avoid electrical shock, do not perform any servicing other than contained in the operating instructions unless you are qualified to do so.

Line voltage is present when covers are removed and the unit is plugged in , even if turned off. Unplug the generator before performing servicing procedures.

CASE REMOVAL

To remove the case from the rf generator, perform the following steps:

1. Unplug the unit.
2. Remove the two screws located at the front center of the bottom and top of the case and the two screws at the rear of the case.
3. Slide the case straight back.
4. To reinstall the case, reverse the procedure.

FUSE REPLACEMENT

If the fuse blows, the pilot light will go out and the Generator will not operate. The fuse should not normally open unless a problem has developed in the unit. Try to determine and correct the cause of the blown fuse, then replace only with a 0.3 A, 250 V, 5 x 20 mm fuse. The fuse is located inside the unit on a printed circuit board on the left hand side (**POWER** switch side) of the unit. For access to the fuse, remove the case from the Generator by following the instructions in the **CASE REMOVAL** paragraph located previously in this section of the manual.

INSTRUMENT REPAIR SERVICE

Because of the specialized skills and test equipment required for instrument repair and calibration, many customers prefer to rely upon **B & K-Precision** for this service. We maintain a network of **B & K-Precision** authorized service agencies for this purpose. To use this service, even if the Generator is no longer under warranty, follow the instructions given in the WARRANTY SERVICE INSTRUCTIONS section of this manual. There is a nominal charge for instruments out of warranty.

MODEL 2005A CALIBRATION PROCEDURE

1. Set up the Model 2005A RF Generator as follows:
   a. Power ON.
   b. INT-EXT switch to EXT.
   c. No connection to INPUT-OUTPUT jack (no external modulation).
   d. Connect RF OUTPUT jack to oscilloscope (at least 40 MHz bandwidth). Do not use terminating resistor.
   e. Connect FREQ MONITOR jack to frequency counter (at least 500 MHz). Do not use terminating resistor.
   f. Select Range F and set dial to 35 MHz.
   g. Set RF LEVEL control for 300 mV p-p on oscilloscope.
2. For each range (starting at F and progressing to A), check the frequency at four points on the dial as listed in the following tables. If adjustment is required, remove the case and adjust to the tighter adjustment limits. Range F must be adjusted before proceeding to other bands.

RANGE F:

DIAL	COUNTER (case on)	ADJ. LIMITS (case off)
150 MHz	145.5-154.5 MHz	147-153 MHz
70 MHz	67.9-72.1 MHz	68.6-71.4 MHz
50 MHz	48.5-51.5 MHz	49-51 MHz
32 MHz	31.04-32.96 MHz	31.36-32.46 MHz

Adjust distance between long metal pieces extending from BAND switch.

RANGE E:

DIAL	COUNTER (case on)	ADJ. LIMITS (case off)
35 MHz	33.95-36.05 MHz	34.3-35.7 MHz
20 MHz	19.4-20.6 MHz	19.6-20.4 MHz
15 MHz	14.55-15.45 MHz	14.7-15.3 MHz
10 MHz	9.7-10.3 MHz	9.8-10.2 MHz

Adjust by shaping slightly the most exterior coil of L605.

RANGE D:

DIAL	COUNTER (case on)	ADJ. LIMITS (case off)
11 MHz	10.67-11.33 MHz	10.78-11.22 MHz
7 MHz	6.79-7.21 MHz	6.86-7.14 MHz
4.5 MHz	4.365-4.635 MHz	4.41-4.59 MHz
3 MHz	2.91-3.09 MHz	2.94-3.06 MHz

Adjust by shaping slightly the most exterior coil of L604.

RANGE C:

DIAL	COUNTER (case on)	ADJ. LIMITS (case off)
3.0 MHz	2.91-3.09 MHz	2.94-3.06 MHz
2.0 MHz	1.94-2.06 MHz	1.96-2.04 MHz
1.5 MHz	1.455-1.545 MHz	1.47-1.53 MHz
0.9 MHz	0.873-0.927 MHz	0.882-0.918 MHz

Adjust distance between two coils of L603.

RANGE B:

DIAL	COUNTER (case on)	ADJ. LIMITS (case off)
900 kHz	873-927 kHz	882-918 kHz
600 kHz	582-618 kHz	588-612 kHz
400 kHz	388-412 kHz	392-408 kHz
290 kHz	281.3-298.7 kHz	284.2-295.8 kHz

Adjust distance between two coils of L602.

RANGE A:

DIAL	COUNTER (case on)	ADJ. LIMITS (case off)
290 kHz	281.3-298.7 kHz	284.2-295.8 kHz
200 kHz	194-206 kHz	196-204 kHz
150 kHz	145.5-154.5 kHz	147-153 kHz
100 kHz	97-103 kHz	98-102 kHz

Adjust distance between two coils of L601.

1. Set up the Model 2005 RF Generator as follows:
   a. Power ON.
   b. INT-EXT switch to EXT.
   c. No connection to INPUT-OUTPUT jack (no external modulation).
   d. Connect RF OUTPUT jack to oscilloscope (at least 40 MHz bandwidth). Do not use terminating resistor.
   e. Connect FREQ MONITOR jack to frequency counter (at least 500 MHz). Do not use terminating resistor.
   f. Select Range F and set dial to 35 MHz.
   g. Set RF LEVEL control for 300 mV p-p on oscilloscope.
2. For each range (starting at F and progressing to A), check the frequency at four points on the dial as listed in the following tables. If adjustment is required, remove the case and adjust to the tighter adjustment limits. Range F must be adjusted before proceeding to other bands.

RANGE F

DIAL	COUNTER (case on)	ADJ. LIMITS (case off)
150 MHz	145.5-154.5 MHz	147-153 MHz
90 MHz	87.3-92.7 MHz	88.2-91.8 MHz
50 MHz	48.5-51.5 MHz	49-51 MHz
32 MHz	31.04-32.96 MHz	31.36-32.46 MHz

Adjust distance between long metal pieces extending from BAND switch.

RANGE E:

DIAL	COUNTER (case on)	ADJ. LIMITS (case off)
35 MHz	33.95-36.05 MHz	34.3-35.7 MHz
25 MHz	24.25-25.75 MHz	24.5-25.5 MHz
15 MHz	14.55-15.45 MHz	14.7-15.3 MHz
10 MHz	9.7-10.3 MHz	9.8-10.2 MHz

Adjust by shaping slightly the most exterior coil of L605.

RANGE D:

DIAL	COUNTER (case on)	ADJ. LIMITS (case off)
11 MHz	10.67-11.33 MHz	10.78-11.22 MHz
8 MHz	7.76-8.24 MHz	7.84-8.16 MHz
4.5 MHz	4.365-4.635 MHz	4.41-4.59 MHz
3 MHz	2.91-3.09 MHz	2.94-3.06 MHz

Adjust by shaping slightly the most exterior coil of L604.

RANGE C:

DIAL	COUNTER (case on)	ADJ. LIMITS (case off)
3.5 MHz	3.395-3.605 MHz	3.43-3.57 MHz
2.5 MHz	2.425-2.575 MHz	2.45-2.55 MHz
1.5 MHz	1.455-1.545 MHz	1.47-1.53 MHz
1 MHz	0.97-1.03 MHz	0.98-1.02 MHz

Adjust distance between two coils of L603.

RANGE B:

DIAL	COUNTER (case on)	ADJ. LIMITS (case off)
1000 kHz	970-1030 kHz	980-1020 kHz
800 kHz	776-824 kHz	784-816 kHz
400 kHz	388-412 kHz	392-408 kHz
300 kHz	291-309 kHz	294-306 kHz

Adjust distance between two coils of L602.

RANGE A:

DIAL	COUNTER (case on)	ADJ. LIMITS (case off)
300 kHz	291-309 kHz	294-306 kHz
250 kHz	194-206 kHz	196-204 kHz
150 kHz	145.5-154.5 kHz	147-153 kHz
100 kHz	97-103 kHz	98-102 kHz

Adjust distance between two coils of L601.

MODEL 2005A PARTS LIST

SCHEMATIC SYMBOL	DESCRIPTION	B&K PRECISION PART NUMBER
	RESISTORS	
	Unlisted resistors are 5%, 1/4 W	
	See Schematic for value	
VR501	100 kΩ,Potentiometer	008-887-9-001
VR502	1 kΩ Potentiometer W/Switch	008-145-9-002
	CAPACITORS	
C101	220 µF, +80/-20%, 50 V, Electrolytic	022-328-9-006
C201	0.01 µF, +80/-20%, 25 V Ceramic	020-433-9-001
C202,204	33 pF, 5%, 25 V NPO Ceramic	031-074-9-003
C203	68 pF, 5%, 25 V NPO Ceramic	031-074-9-004
C205	1000 pF, +80/-20%, 50 V Ceramic	020-433-9-002
C206	0.01 µF, +80/-20%, 25 V Ceramic	020-433-9-001
C207	1000 pF, +80/-20%, 25 V Ceramic	020-432-9-001
C208	0.1 µF, +80/-20%, 25 V Ceramic	020-386-9-004
C209	2 pF, ± 0.5 pF, 25 V NPO Ceramic	031-074-9-001
C304	1500 pF, 5%, 50 V Polyester	025-283-9-001
C401	10 µF, +80/-20%, 16 V Electrolytic	022-393-9-001
C402	4.7 µF, +80/-20%, 50 V Electrolytic	022-336-9-002
C403	220 µF, +80/-20%, 25 V Electrolytic	022-336-9-001
C404	220 µF, +80/-20%, 16 V Electrolytic	022-393-9-002
C405	22 µF, +80/-20%, 25 V Electrolytic	022-393-9-004
C406	10 µF, +80/-20%, 50 V Electrolytic	022-390-9-001
C407	47 µF, +80/-20%, 16 V Electrolytic	022-393-9-003
C408	1000 pF, +80/-20%, 25 V Ceramic	020-432-9-001
C409-411	0.047 µF, 5%, 50 V Polyester	025-283-9-002
C502,504	0.047 µF, +80/-20%, 25 V Ceramic	020-385-9-003
C503	33 pF, 5%, 25 V NPO Ceramic	031-074-9-003
C505	100 pF, 5%, 25 V NPO Ceramic	031-074-9-002
C506	0.01 µF, +80/-20%, 25 V Ceramic	020-433-9-001
C507	100 µF, +80/-20%, 25 V Electrolytic	022-328-9-001
VC401	Variable Tuning Capacitor	029-021-9-001

TRANSISTORS & DIODES

Q201,202	2N5485,FET	182-067-9-001
Q203	2SC1730K, NPN Transistor	176-222-9-001
Q301,302	2SC1815-GN, NPN Transistor	176-095-9-001
Q501	2N5485, FET	182-067-9-001
Q502	2SC1730K, NPN Transistor	176-222-9-001
D101,102	1 Amp, 600 PIV Diode	151-050-9-001
D103	LED, Red	158-067-9-001
D301	10V, +1.7/-2.7%, 500 mW Zener Diode	152-189-9-001

TRANSFORMERS, COILS & SWITCHES

T101	Power Transformer (120, 220, 240 V PRI)	065-253-9-001
L601	7.5 mHy, 3% Coil	044-071-9-001
L602	820 µHy,3% Coil	044-071-9-002
L603	80 µHy, 3% Coil	044-071-9-003
L604	6.0 µHy, 3% Coil	044-071-9-004
L605	0.55 µHy, 10% Coil	044-071-9-005
L606	Flat Copper Wire	044-070-9-006
S101	Pushbutton Switch, POWER	088-178-9-001
S401	Lever Switch, INT/EXT	080-032-9-001
S601	Rotary Switch, 6 Position, FREQUENCY RANGE	083-326-9-001

MISCELLANEOUS

F101	300 mA, 250 V, 5 x 20 mm Fast Acting Fuse	196-300-0-300
	Fuse Clip (2 required)	741-209-9-001
	AC Receptacle (Line Cord)	770-022-9-001
	Line Cord Set, CSA/UL	420-039-9-001
	BNC Connector	772-024-9-002
	Front Plate (Sub-Panel)	254-146-9-001
	Front Bezel, Black	380-656-9-001
	Front Inlay (Nameplate)	260-541-9-001
	Sub-Chassis	258-074-9-001
	Metal Case, Black	272-203-9-001
	Foot	381-152-9-001
	Scale Pointer (Frequency)	265-051-9-001
	Shaft Bearing	849-019-9-001
	Scale Pointer Bushing	849-019-9-002

Power Switch Bezel, Brown	380-601-9-001
Knob, Black, FREQUENCY Dial	751-343-9-001
Knob, Black, MODE LEVEL & RF LEVEL	751-343-9-002
Knob, Silver, INT/EXT MODULATION	751-381-9-001
Knob, Black, FREQUENCY RANGE	751-343-9-004
Switch Button, Red	384-079-9-001
Cable Assembly, BNC-Alligator Clips	534-241-0-000
Instruction Manual	480-673-9-001

ACCESSORIES SUPPLIES WITH UNIT

Output Cable, BNC to insulated Clips
Power Cord, Detachable
Instruction Manual
Schematic Diagram & Parts List

U.S.A. PARTS ORDERING INFORMATION

There is a minimum charge for each invoice. Order will be shipped C.O.D. unless previous open account arrangements have been made or remittance accompanies order. Advance remittance must cover handling, postage, or express charges. Specify model and serial number when ordering replacement parts.

ORDER REPLACEMENT PARTS FROM:

B & K-Precision, Factory Service Operations

Maxtec International Corporation

6470 West Cortland Street

Chicago, Illinois 60635

Tel (312) 889-1448

SCHEMATIC SYMBOL	DESCRIPTION	B&K PRECISION PART NUMBER
	RESISTORS	
	Unlisted resistors are 5%, 1/8 W	
	See Schematic for value	
R101	47 Ω, 5%, 1/4 W Carbon Film	002-104-5-470
R102	33 kΩ, 5%, 1/4 W Carbon Film	002-104-5-333
R401	33 Ω, 5%, 1/4 W Carbon Film	002-104-5-330
R406	10 kΩ, 5%, 1/4 W Carbon Film	002-104-5-103
R407	4.7 kΩ, 5%, 1/4 W Carbon Film	002-104-5-472
R408	9.1 kΩ, 5%, 1/4 W Carbon Film	002-104-5-912
R409	2.7 kΩ, 5%, 1/4 W Carbon Film	002-104-5-272
R413	330 Ω, 5%, 1/4 W Carbon Film	002-104-5-331
R507	1 kΩ, 5%, 1/4 W Carbon Film	002-104-5-102
R508	75 Ω, 5%, 1/4 W Carbon Film	002-104-5-750
R509	100 Ω, 5%, 1/4 W Carbon Film	002-104-5-101
R510	1 kΩ, 5%, 1/4 W Carbon Film	002-104-5-102
R516,517	51 Ω, 5%, 1/4 W Carbon Film	002-104-5-510
R607	2.2 kΩ, 5%, 1/4 W Carbon Film	002-104-5-222
R608	8.2 kΩ, 5%, 1/4 W Carbon Film	002-104-5-822
VR501	100 kΩ Potentiometer	008-887-9-001
VR502	1 kΩ Potentiometer W/Switch	008-845-9-002
	CAPACITORS	
C101	220 µF, +80/-20%, 50 V Electrolytic	022-328-9-006
C201	0.01 µF, +80/-20%, 25 V Ceramic	020-433-9-001
C202,204	33 pF, 5%, 25 V NPO Ceramic	031-074-9-003
C203	68 pF, 5%, 25 V NPO Ceramic	031-074-9-004
C205	1000 pF, +80/-20%, 50 V Ceramic	020-433-9-002
C206	0.01 µF, +80/-20%, 25 V Ceramic	020-433-9-001
C207	1000 pF, +80/-20%, 25 V Ceramic	020-432-9-001
C208	0.1 µF, +80/-20%, 25 V Ceramic	020-386-9-004
C209	2 pF, ±0.5 pF, 25 V NPO Ceramic	031-074-9-001
C304	1500 pF, 5%, 50 V Polyester	025-283-9-001
C401	10 µF, +80/-20%, 16 V Electrolytic	022-393-9-001
C402	4.7 µF, +80/-20%, 50 V Electrolytic	022-336-9-002

C403	220 µF, +80/-20%, 25 V Electrolytic	022-336-9-001
C404	220 µF, +80/-20%, 16 V Electrolytic	022-393-9-002
C405	22 µF, +80/-20%, 25 V Electrolytic	022-393-9-004
C406	10 µF, +80/-20%, 50 V Electrolytic	022-390-9-001
C407	47 µF, +80/-20%, 16 V Electrolytic	022-393-9-003
C408	1000 pF, +80/-20%, 25 V Ceramic	020-432-9-001
C409-411	0.047 µF, 5%, 50 V Polyester	025-283-9-002
C502,504	0.047 µF, +80/-20%, 25 V Ceramic	020-385-9-003
C503	33 pF, 5%, 25 V NPO Ceramic	031-074-9-003
C505	100 pF, 5%, 25 V NPO Ceramic	031-074-9-002
C506	0.01 µF, +80/-20%, 25 V Ceramic	020-433-9-001
C507	100 µF, +80/-20%, 25 V Electrolytic	022-328-9-001
C601	100 pF, 5%, 50 V NPO Ceramic	031-069-9-003
VC401	Variable Tuning Capacitor	029-020-9-001

TRANSISTORS & DIODES

Q201,202	2N5485, FET	182-067-9-001
Q203	2SC1730K, NPN Transistor	176-222-9-001
Q301,302	2SC1815-GN, NPN Transistor	176-095-9-001
Q501	2N5485, FET	182-067-9-001
Q502	2SC1730K, NPN Transistor	176-222-9-001
D101,102	1 Amp, 600 PIV Diode	151-050-9-001
D103	LED, Red	158-067-9-001
D301	10 V +1.7/-2.7%, 500 mW Zener Diode	152-189-9-001

TRANSFORMERS, COILS & SWITCHES

T101	Power Transformer	065-235-9-001
L601	6.3 mHy, 3% Coil	044-070-9-001
L602	605 µHy, 3% Coil	044-070-9-002
L603	51 µHy, 3% Coil	044-070-9-003
L604	4.8 µHy, 3% Coil	044-070-9-004
L605	0.44 µHy, 10% Coil	044-070-9-005
L606	Flat Copper Wire	044-070-9-006
S101	Pushbutton Switch, POWER	088-178-9-001
S401	Lever Switch, INT/EXT	080-032-9-001
S601	Rotary Switch, 6 Position, FREQUENCY RANGE	083-326-9-001

MISCELLANEOUS

F101	300 mA, 250 V, 5 x 20 mm Fast Acting Fuse	194-030-9-001
	Fuse Clip (2 required)	741-209-9-001
	AC Receptacle (Line Cord)	770-022-9-001
	Line Cord Set, CSA/UL	420-039-9-001
	BNC Connector	772-024-9-001
	Front Plate (Sub-Panel)	254-132-9-001
	Front Bezel, Brown	380-601-9-002
	Front Inlay (Nameplate)	260-494-9-001
	Sub-Chassis	258-072-9-001
	Metal Case, Brown	272-198-9-001
	Foot	381-152-9-001
	Scale Pointer (Frequency)	265-051-9-001
	Shaft Bearing	849-019-9-001
	Scale Pointer Bushing	849-019-9-002
	Power Switch Bezel, Brown	380-601-9-001
	Knob, Black, FREQUENCY DIAL	751-343-9-001
	Knob, Black, MODE LEVEL & RF LEVEL	751-343-9-002
	Knob, Silver, INT/EXT MODULATION	751-343-9-003
	Knob, Black, FREQUENCY RANGE	751-343-9-004
	Switch Button, Red	384-079-9-001
	Cable Assembly, BNC-Alligator Clips	534-241-0-000
	Instruction Manual	480-574-9-001

ACCESSORIES SUPPLIED WITH UNIT

Output Cable, BNC to Insulated Clips
Power Cord, Detachable
Instruction Manual
Schematic Diagram & Parts List

U.S.A. PARTS ORDERING INFORMATION

There is a minimum charge for each invoice. Orders will be shipped C.O.D. unless previous open account arrangements have been made or remittance accompanies order. Advance remittance must cover handling, postage, or express charges. Specify model and serial number when ordering replacement parts.

ORDER REPLACEMENT PARTS FROM:

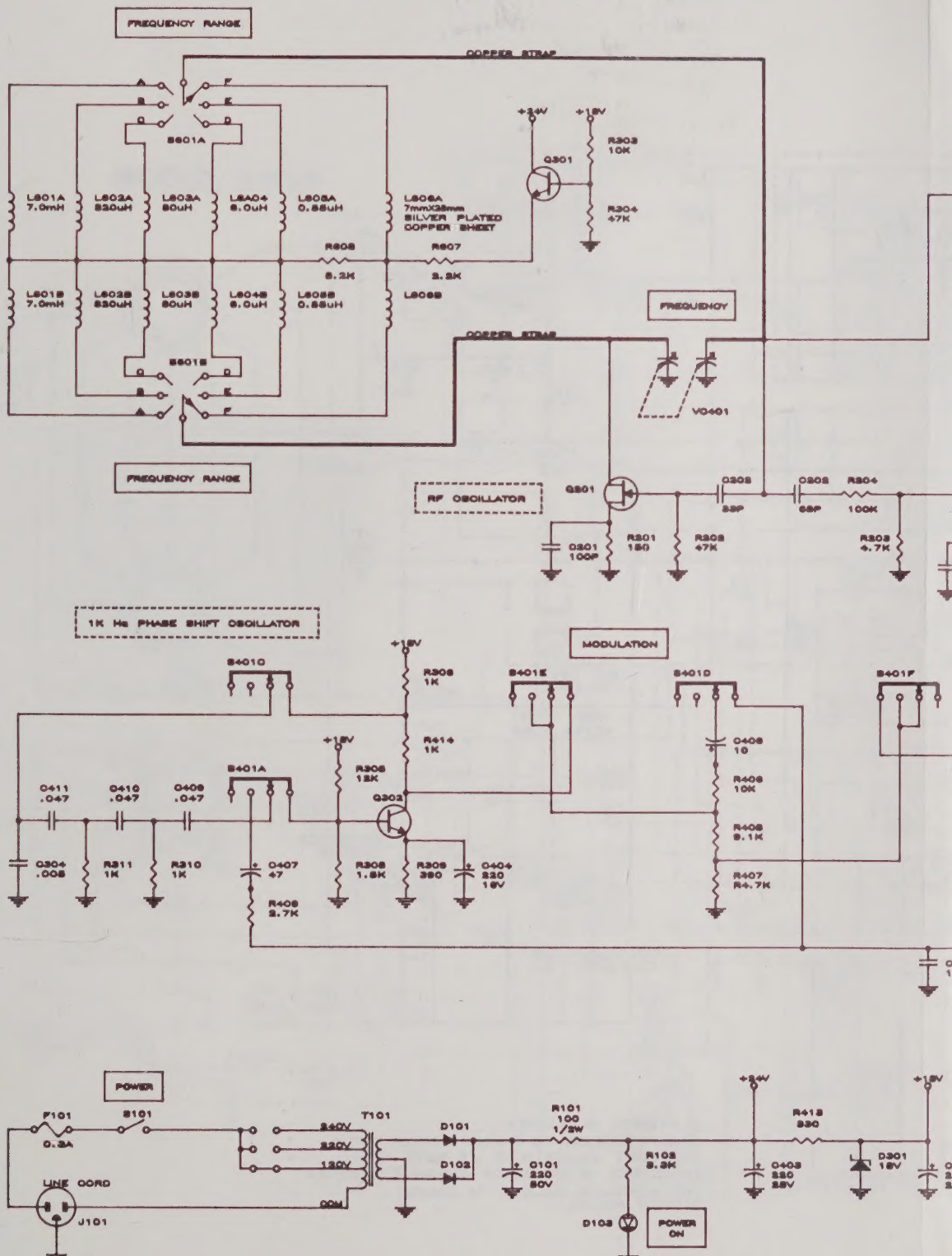
B & K-Precision, Factory Service Operations

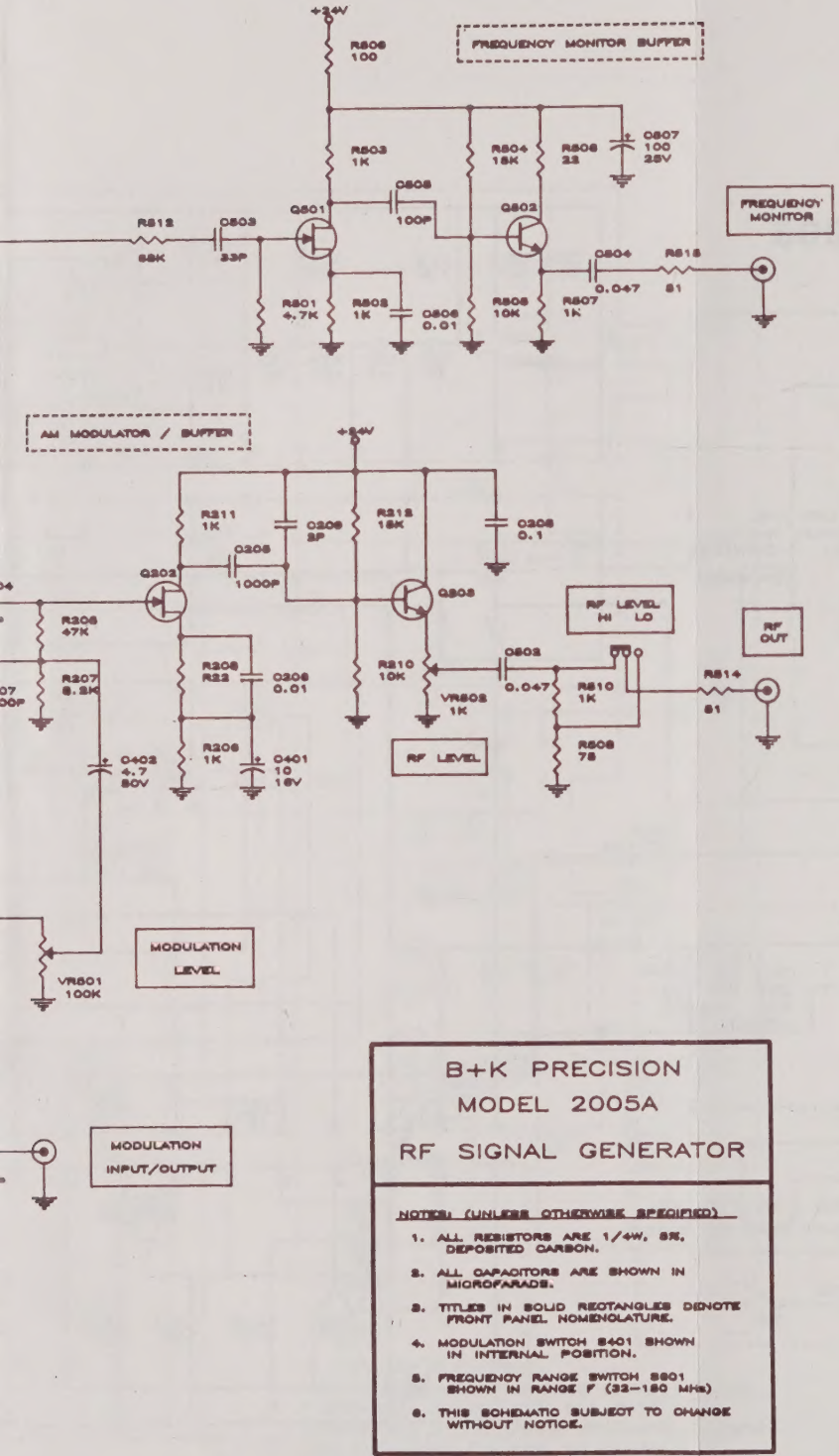
Maxtec International Corporation

6470 West Cortland Street

Chicago, Illinois 60635

Tel (312) 889-1448


FREQUENCY RANGE
COPPER STRAP
S601A
L601A 7.0mH
L602A 830uH
L603A 80uH
L604A 8.0uH
L605A 0.85uH
L606A 7mmX38mm SILVER PLATED COPPER SHEET
+24V
+18V
Q301
R303 10K
R304 47K
R608 5.2K
R607 3.2K
L601B 7.0mH
L602B 830uH
L603B 80uH
L604B 8.0uH
L605B 0.85uH
L606B
FREQUENCY
S601B
VC401
FREQUENCY RANGE
RF OSCILLATOR
Q301
C302 33P
C303 68P
R304 100K
C301 100P
R301 180
R302 47K
R303 4.7K
1K Hz PHASE SHIFT OSCILLATOR
MODULATION
S401C
S401A
S401E
S401D
S401F
+18V
R306 1K
R414 1K
R306 12K
C411 .047
C410 .047
C409 .047
C304 .008
R311 1K
R310 1K
C407 47
R408 2.7K
Q302
R305 1.5K
R309 390
C404 220 16V
C406 10
R406 10K
R408 9.1K
R407 R4.7K
POWER
F101 0.3A
S101
LINE CORD
J101
240V
220V
120V
COM
T101
D101
D102
R101 100 1/2W
C101 220 50V
R103 3.3K
D103
POWER ON
+24V
+18V
R413 330
C403 220 25V
D301 18V



B+K PRECISION

MODEL 2005A

RF SIGNAL GENERATOR

NOTES: (UNLESS OTHERWISE SPECIFIED)

1. ALL RESISTORS ARE 1/4W, 5%, DEPOSITED CARBON.
2. ALL CAPACITORS ARE SHOWN IN MICROFARADS.
3. TITLES IN SOLID RECTANGLES DENOTE FRONT PANEL NOMENCLATURE.
4. MODULATION SWITCH S401 SHOWN IN INTERNAL POSITION.
5. FREQUENCY RANGE SWITCH S501 SHOWN IN RANGE F (32–150 MHz)
6. THIS SCHEMATIC SUBJECT TO CHANGE WITHOUT NOTICE.

MP MASTER
MA34939